

In the Claims

Claims 1-37 (cancelled).

Claim 38 (currently amended): A physical vapor deposition target construction comprising:

a physical vapor deposition target consisting essentially of high purity aluminum material;

~~and diffusion bonded to an aluminum-containing backing plate;~~

a diffusion bond between the target and backing plate; and

wherein a predominate portion of the grains in the target material are less than 100 microns in maximum dimension; and

wherein the construction is formed utilizing a process comprising the following steps in the following order:

the target material is subjected to at least 95% compression; and

the target material is diffusion bonded to the backing plate under conditions which include a temperature of from 300°C to 340°C and a pressure of from about 10,000 psi to about 16,000 psi, with such conditions being maintained for a time of from about 15 minutes to about 1 hour.

Claim 39 (previously added): The physical vapor deposition target construction of claim 38 wherein all of the grains in the target material have the maximum dimension of the less than 100 microns.

Claim 40 (previously added): The physical vapor deposition target construction of claim 38 wherein the maximum dimension of the predominate portion of the grains in the target material is less than or equal to about 50 microns.

Claim 41 (previously added): The physical vapor deposition target construction of claim 38 wherein the maximum dimension of all of the grains in the target material is less than or equal to about 50 microns.

Claim 42 (previously added): The physical vapor deposition target construction of claim 38 wherein the maximum dimension of the predominate portion of the grains in the target material is from about 30 microns to less than 100 microns.

Claim 43 (previously added): The physical vapor deposition target construction of claim 38 wherein the maximum dimension of all of the grains in the target material is from about 30 microns to less than 100 microns.

Claim 44 (previously added): The physical vapor deposition target construction of claim 38 wherein the diffusion bond between the target and the backing plate has a bond strength of at least about 5000 psi.

Claim 45 (previously added): The physical vapor deposition target construction of claim 44 wherein all of the grains in the target material have the maximum dimension of the less than 100 microns.

Claim 46 (previously added): The physical vapor deposition target construction of claim 44 wherein the maximum dimension of the predominate portion of the grains in the target material is less than or equal to about 50 microns.

Claim 47 (previously added): The physical vapor deposition target construction of claim 44 wherein the maximum dimension of all of the grains in the target material is less than or equal to about 50 microns.

Claim 48 (previously added): The physical vapor deposition target construction of claim 44 wherein the maximum dimension of the predominate portion of the grains in the target material is from about 30 microns to less than 100 microns.

Claim 49 (previously added): The physical vapor deposition target construction of claim 44 wherein the maximum dimension of all of the grains in the target material is from about 30 microns to less than 100 microns.

Claim 50 (previously added): The physical vapor deposition target construction of claim 38 wherein the diffusion bond between the target and the backing plate has a bond strength of from about 8000 psi to about 10,000 psi.

Claim 51 (previously added): The physical vapor deposition target construction of claim 38 wherein the backing plate comprises a material selected from the group consisting of 2000 Series aluminum, 5000 Series aluminum, 6000 Series aluminum, and 7000 Series aluminum.

Claim 52 (previously added): The physical vapor deposition target construction of claim 38 wherein the backing plate comprises 6061 aluminum alloy.